

6K6-GT
Description and Rating
PENTODE

The 6K6-GT is a power-amplifier pentode designed for use in the audio-frequency power output stage of television and radio receivers. It may also be used as a triode-connected vertical deflection amplifier in television receivers. Electrically, the 6K6-GT is identical to the type 41.

GENERAL

Cathode - Coated Unipotential

Heater Voltage, A-C or D-C	6.3	Volts
Heater Current	0.4	Ampere

Envelope - T-9, Glass
Base - B6-81 or B7-7, Intermediate Shell Octal
or B6-84 or B7-59, Short Intermediate Shell Octal
Mounting Position - Any

Direct Interelectrode Capacitances, approximate *

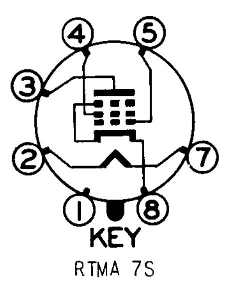
Grid-Number 1 to Plate	0.5	μμf
Input	5.5	μμf
Output	6.0	μμf

MAXIMUM RATINGS

DESIGN-CENTER VALUES UNLESS OTHERWISE INDICATED

	Class A_1 Amplifier	Vertical Deflection Amplifier + (Triode Connection) §	
D-C Plate Voltage	315	315	Volts
Peak Positive Pulse Plate Voltage ▽	---	1200	Volts
Screen Voltage	285	---	Volts
Peak Negative Grid-Number 1 Voltage	---	250	Volts
Plate Dissipation	8.5	7.0 #	Watts
Screen Dissipation	2.8	---	Watts
D-C Cathode Current	---	25	Milliamperes
Peak Cathode Current	---	75	Milliamperes
Heater-Cathode Voltage			
Heater Positive with Respect to Cathode			
D-C Component	100	100	Volts
Total D-C and Peak	200	200	Volts
Heater Negative with Respect to Cathode			
Total D-C and Peak	200	200	Volts
Grid-Number 1 Circuit Resistance			
With Fixed Bias	0.1	---	Megohm
With Cathode Bias	0.5	2.2	Megohms

BASING DIAGRAM

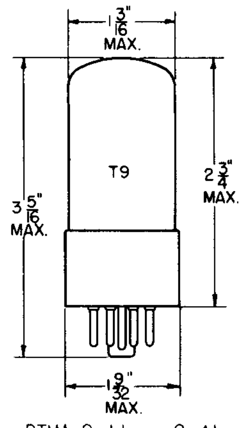


RTMA 7S
BOTTOM VIEW

TERMINAL CONNECTIONS

Pin 1 - No Connection ‡
Pin 2 - Heater
Pin 3 - Plate
Pin 4 - Grid Number 2 (Screen)
Pin 5 - Grid Number 1
Pin 7 - Heater
Pin 8 - Cathode and Grid Number 3

PHYSICAL DIMENSIONS



RTMA 9-11 or 9-41

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A_1 AMPLIFIER

Plate Voltage	100	250	315	Volts
Screen Voltage	100	250	250	Volts
Grid-Number 1 Voltage	-7	-18	-21	Volts
Peak AF Grid-Number 1 Voltage	7	18	21	Volts
Plate Resistance, approximate	104000	90000	110000	Ohms
Transconductance	1500	2300	2100	Micromhos
Zero-Signal Plate Current	9.0	32	25.5	Milliamperes
Maximum-Signal Plate Current	9.5	33	28	Milliamperes
Zero-Signal Screen Current	1.6	5.5	4.0	Milliamperes
Maximum-Signal Screen Current	3.0	10	9.0	Milliamperes
Load Resistance	12000	7600	9000	Ohms
Total Harmonic Distortion, approximate	11	11	15	Percent
Maximum-Signal Power Output	0.35	3.4	4.5	Watts

PUSH-PULL CLASS A_1 AMPLIFIER, VALUES FOR TWO TUBES

	Fixed Bias	Cathode Bias	
Plate Voltage	285	285	Volts
Screen Voltage	285	285	Volts
Grid-Number 1 Voltage	-25.5	---	Volts
Cathode-Bias Resistor	---	400	Ohms
Peak AF Grid-to-Grid Voltage	51	51	Volts
Zero-Signal Plate Current	55	55	Milliamperes
Maximum-Signal Plate Current	72	61	Milliamperes
Zero-Signal Screen Current	9.0	9.0	Milliamperes
Maximum-Signal Screen Current	17	13	Milliamperes
Effective Load Resistance, Plate-to-Plate	12000	12000	Ohms
Total Harmonic Distortion	6	4	Percent
Maximum-Signal Power Output	10.5	9.8	Watts

AVERAGE CHARACTERISTICS, TRIODE CONNECTION§

Plate Voltage	250	Volts
Grid-Number 1 Voltage	-18	Volts
Amplification Factor	6.8	
Plate Resistance, approximate	2500	Ohms
Transconductance	2700	Micromhos
Plate Current	37.5	Milliamperes
Grid-Number 1 Voltage, approximate, I_b = 0.5 Milliampere	-48	Volts

* *Without external shield.*

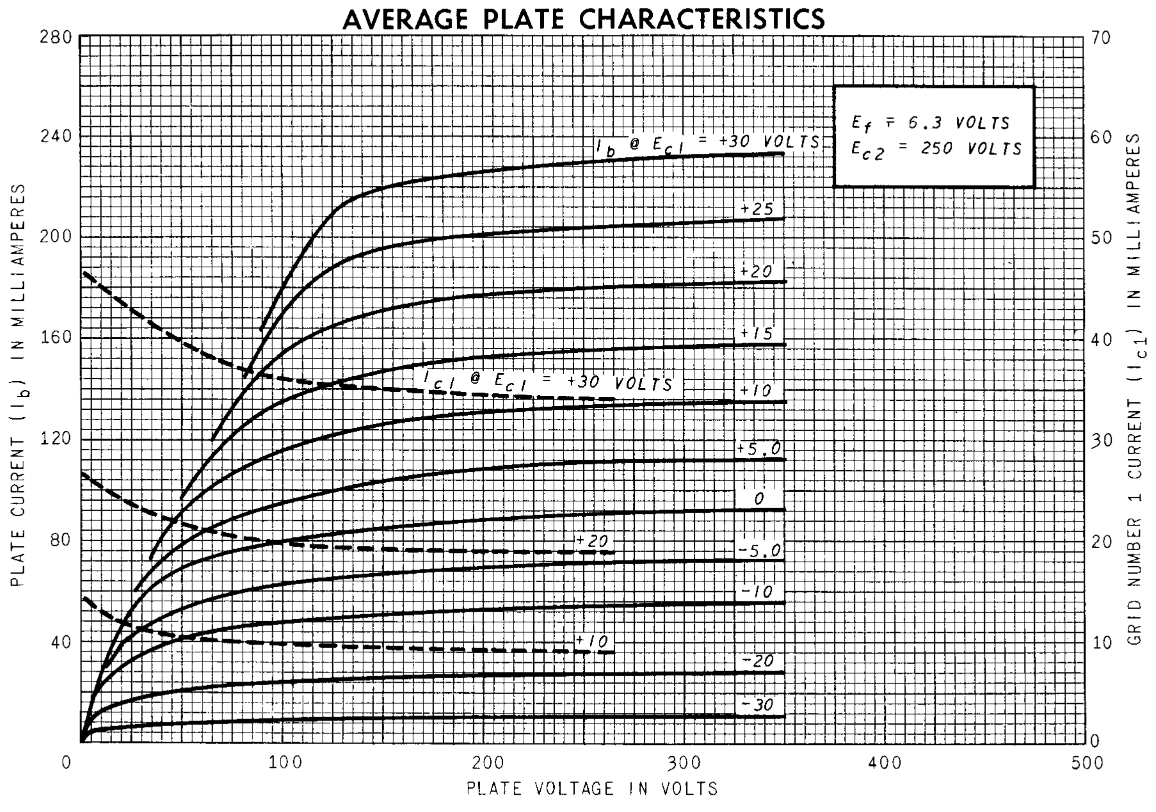
‡ *Pin 1 omitted on bases B6-81 and B6-84.*

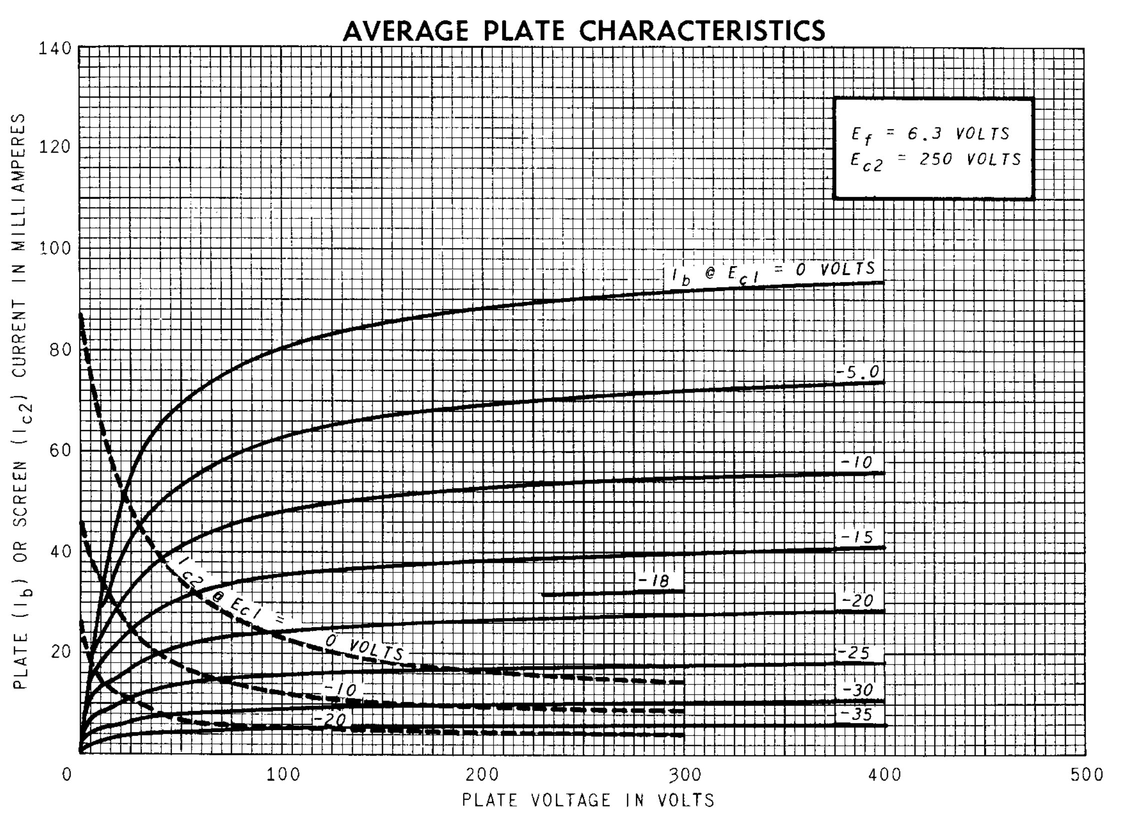
+ *For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice for Television Stations; Federal Communications Commission". The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.*

∇ *Value given is to be considered as an Absolute Maximum Rating. In this case, the combined effect of supply voltage variation, manufacturing variation including components in the equipment, and adjustment of equipment controls should not cause the rated value to be exceeded.*

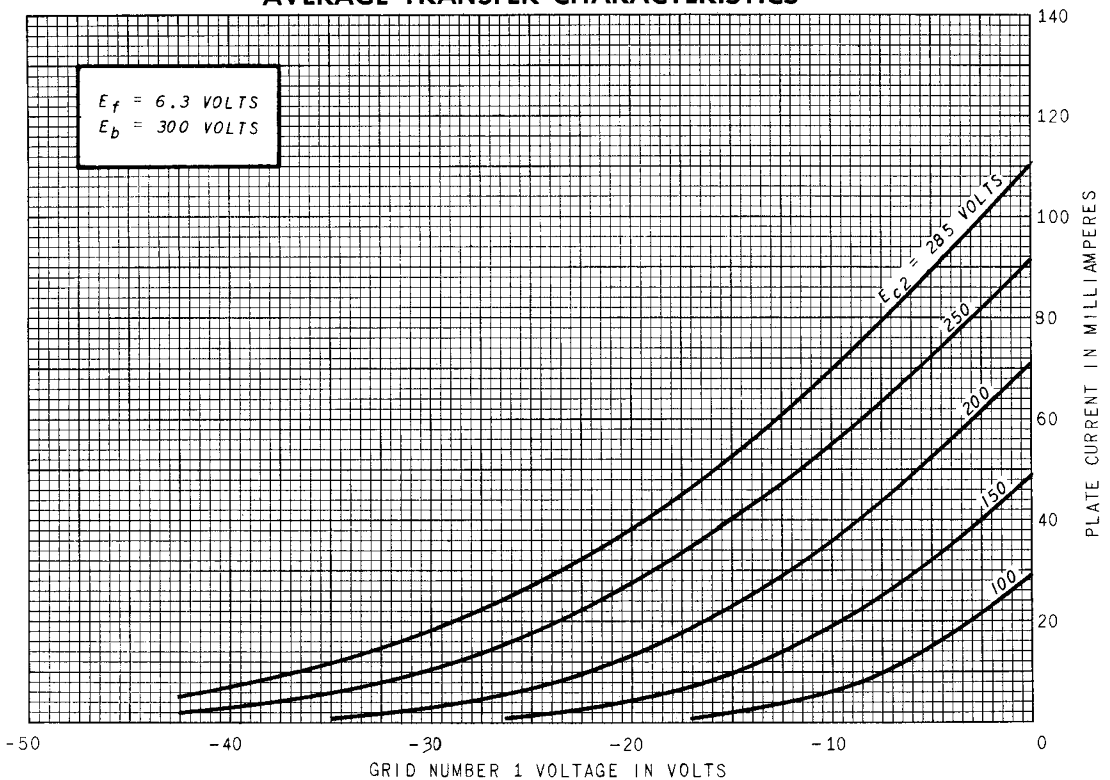
In stages operating with grid-leak bias, an adequate cathode-bias resistor or other suitable means is required to protect the tube in the absence of excitation.

§ *With screen tied to plate.*


AVERAGE PLATE CHARACTERISTICS
Ef = 6.3 VOLTS
Ec2 = 250 VOLTS
Ib @ Ec1 = +30 VOLTS
+25
+20
+15
+10
+5.0
0
-5.0
-10
-20
-30
Ic1 @ Ec1 = +30 VOLTS
+20
+10
PLATE CURRENT (Ib) IN MILLIAMPERES
GRID NUMBER 1 CURRENT (Ic1) IN MILLIAMPERES
PLATE VOLTAGE IN VOLTS
0
100
200
300
400
500
280
240
200
160
120
80
40
70
60
50
40
30
20
10

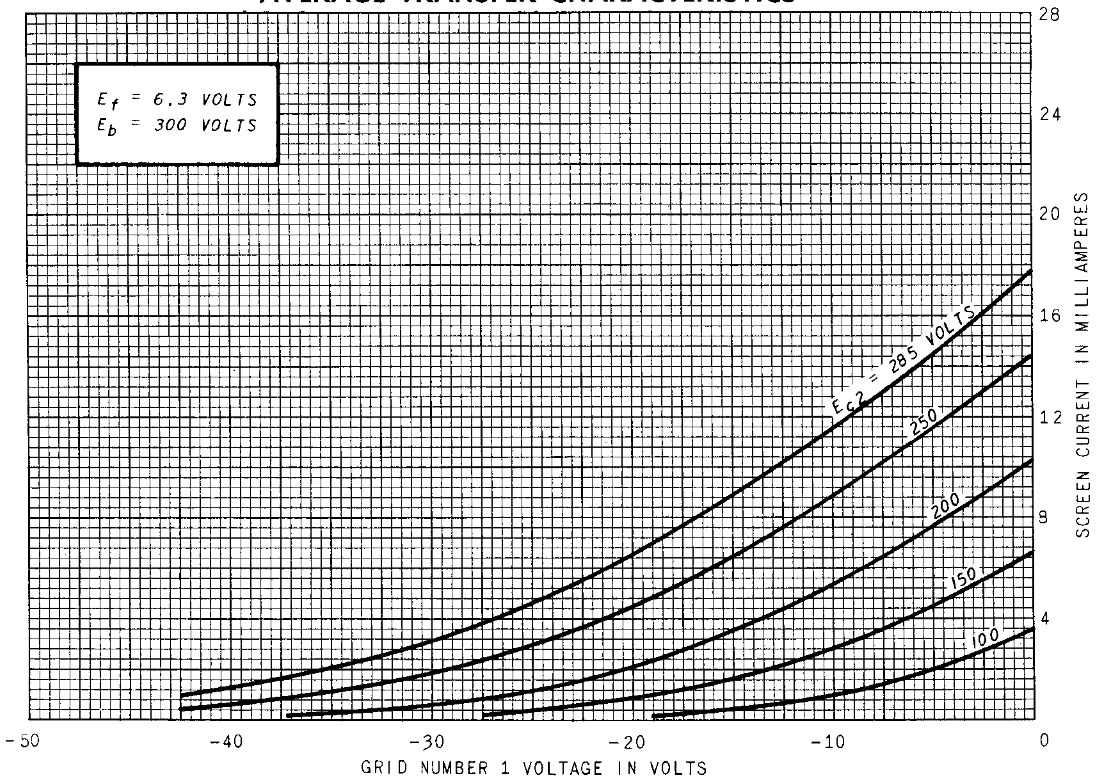

AVERAGE PLATE CHARACTERISTICS
Ef = 6.3 VOLTS
Ec2 = 250 VOLTS
Ib @ Ec1 = 0 VOLTS
-5.0
-10
-15
-18
-20
-25
-30
-35
Ic2 @ Ec1 = 0 VOLTS
-10
-20
PLATE (Ib) OR SCREEN (Ic2) CURRENT IN MILLIAMPERES
PLATE VOLTAGE IN VOLTS
0
100
200
300
400
500
140
120
100
80
60
40
20

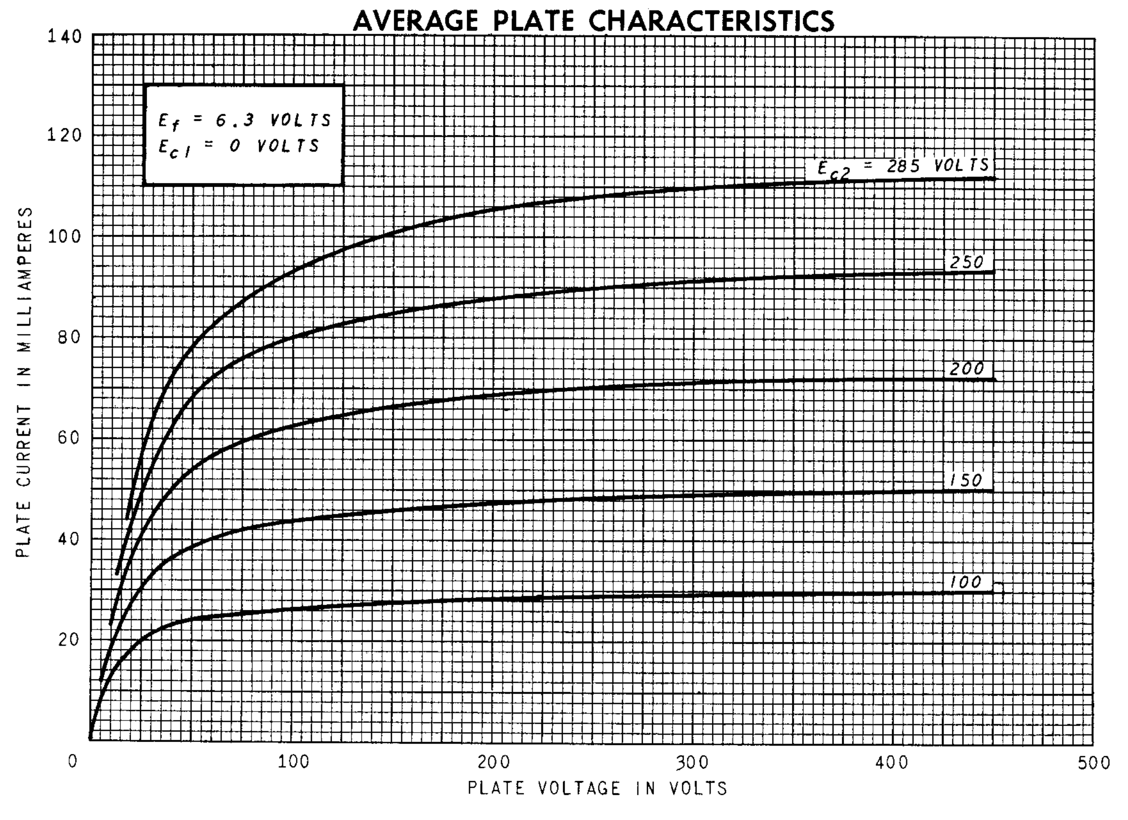
AVERAGE TRANSFER CHARACTERISTICS

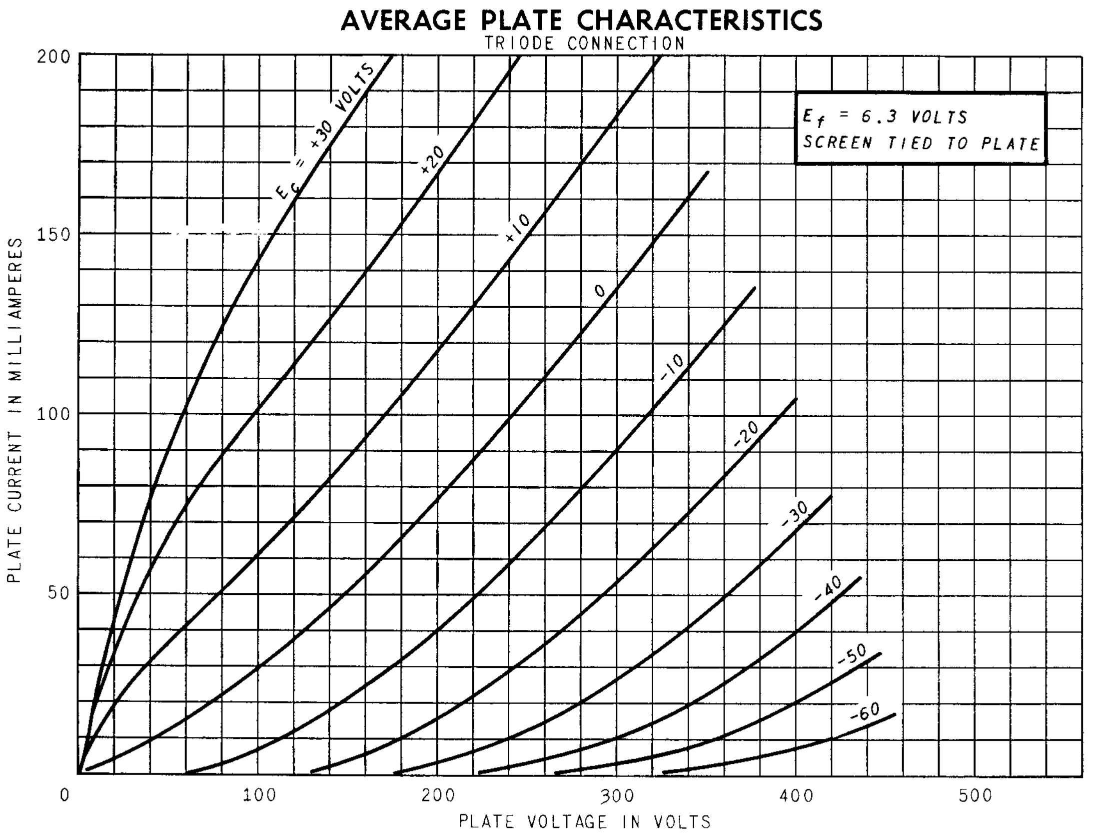




AVERAGE TRANSFER CHARACTERISTICS




AVERAGE PLATE CHARACTERISTICS
Ef = 6.3 VOLTS
Ec1 = 0 VOLTS
Ec2 = 285 VOLTS
250
200
150
100
PLATE CURRENT IN MILLIAMPERES
140
120
100
80
60
40
20
0
100
200
300
400
500
PLATE VOLTAGE IN VOLTS


AVERAGE PLATE CHARACTERISTICS
TRIODE CONNECTION
Ef = 6.3 VOLTS
SCREEN TIED TO PLATE
Ec = +30 VOLTS
+20
+10
0
-10
-20
-30
-40
-50
-60
PLATE CURRENT IN MILLIAMPERES
200
150
100
50
0
100
200
300
400
500
PLATE VOLTAGE IN VOLTS

OPERATION CHARACTERISTICS

E_f = 6.3 VOLTS
E_b = 250 VOLTS
E_{c2} = 250 VOLTS
E_{c1} = -18 VOLTS
E_{sig} = 12.7 VOLTS (RMS)

POWER OUTPUT

TOTAL HARMONIC DISTORTION

POWER OUTPUT IN WATTS: 0, 1, 2, 3, 4, 5

TOTAL HARMONIC DISTORTION IN PERCENT: 0, 10, 20, 30, 40

LOAD RESISTANCE IN OHMS: 0, 2000, 4000, 6000, 8000, 10000, 12000, 14000

TUBE DEPARTMENT

GENERAL ELECTRIC

Schenectady 5, N. Y.

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